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A Novel Algorithm for Parsing IFC Models

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Abstract : Information technology has made a pivotal progress across disparate disciplines, one of which is AEC (Architecture, Engineering and Construction) industry. CAD is a form of computer-aided building modulation that architects, engineers and contractors use to create and view two- and three-dimensional models. The AEC industry also uses building information modeling (BIM), a newer computerized modeling system that can create four-dimensional models; this software can greatly increase productivity in the AEC industry. BIM models generate open source IFC (Industry Foundation Classes) files which aim for interoperability for exchanging information throughout the project lifecycle among various disciplines. The methods developed in previous studies require either an IFC schema or MVD and software applications, such as an IFC model server or a Building Information Modeling (BIM) authoring tool, to extract a partial or complete IFC instance model. This paper proposes an efficient algorithm for extracting a partial and total model from an Industry Foundation Classes (IFC) instance model without an IFC schema or a complete IFC model view definition (MVD).

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